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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/103,528	06/24/98	BENAZZI	E PET1673

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MILLEN WHITE ZELANO & BRANIGAN
ARLINGTON COURTHOUSE PLAZA I
SUITE 1400
2200 CLARENDON BOULEVARD
ARLINGTON VA 22201

EXAMINER

SAMPLE, D

ART UNIT	PAPER NUMBER
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1755

10

DATE MAILED: 08/27/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/103,528

Applicant(s)

BENAZZI et al.

Examiner

David Sample

Group Art Unit

1755

☒ Responsive to communication(s) filed on Jun 17, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-30 is/are pending in the application.

Of the above, claim(s) 18-30 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-17 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1755

DETAILED ACTION

The rejections made in the previous Office Action, and not repeated below, are hereby withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 U.S.C. §§ 102 & 103(a)

Claims 1-6, and 11-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Casci et al. (US Patent No. 4,537,754).¹

Casci et al. discloses a zeolite designated EU-1 having a Si/Al ratio of, for example, 60, and which may be as high as 250. See col. 12, lines 7-8, and Table 4, Example 5.

Casci et al. fails to disclose that the broad range of Si/T ratios is a result of removal of T atoms. However, the recitation of removing T atoms is a product recitation in a process claim. Product claims employing process limitations are not limited to the manipulations of the recited steps, only the structure implies by the steps. MPEP 2113. There appears to be no difference between a zeolite having the recited Si/T ratio that results from direct synthesis as compared to a product that results from removal of T atoms.

¹ "The use of 35 U.S.C. 102 / 103 rejections for product-by-process claims has been approved by the courts." MPEP 2113.

Art Unit: 1755

The recitations of claims 11-17 can be found in the reference at column 5, line 34 to column 6, line 2.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casci et al. (US Patent No. 4,537,754) in view of Kuehl et al. (US Patent No. 4,954,243).

Casci et al. discloses a zeolite designated EU-1 which has a Si/Al ratio of above 5 and as high as 250. See col. 12, line 7. The reference differs from the present claims by failing to disclose extracting at least 10% of T atoms.

Kuehl et al. discloses a method for extracting aluminum from zeolites by calcining (i.e., heat treating) a zeolite, and contacting the zeolite with an acid or chelating agent (for example EDTA). See the Abstract, col. 11, lines 44-65, and col. 13., line 10-16. The treatment results in removal of 10 to 90% of the aluminum from the zeolite. See col.12, lines 59-63.

Kuehl et al. does not specifically recite that its method is amenable with EU-1. However, Kuehl et al. discloses that its method can be performed on zeolites having a constraint index of 1 to 12. Kuehl et al. discloses that ZSM-23 has a constraint index of 9.1. See col. 5, line 34. Casci et al. discloses that EU-1 has a structure that is closely related to ZSM-23. See col. 2, line 64 to col. 3, line 7. Casci et al. analogizes the correlation to that of ZSM-5 and ZSM-11. Id. ZSM-5 and ZSM-11 have similar constraint indexes. See col. 5, lines 25-26 of Kuehl et al. Accordingly, since ZSM-23 has a constraint index of between 1 and 12, one of ordinary skill in the art would expect that EU-1 has a constraint index of 1 to 12.

Art Unit: 1755

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have dealuminated the zeolite disclosed by Casci et al. as suggested by Kuehl et al. because the dealumination process results in an increase in the acid activity of the resultant zeolite. See col. 2, lines 54-57.

The recitations of claims 11-17 can be found in the Casci et al. at column 5, line 34 to column 6, line 2.

Response to Arguments

Applicant's arguments filed June 17, 1999 have been fully considered but they are not persuasive.

Rejection over Casci et al. (US 4,537,754)

Applicants assert that the Declaration submitted under 37 C.F.R. § 1.132 is sufficient to overcome the rejection because the Declaration establishes that the dealumination treatment results in a different product than the product taught by Casci et al. The declaration is not deemed persuasive. The Declaration compares an as-prepared zeolite having an $\text{SiO}_2/\text{Al}_2\text{O}_3$ of 60.5 (catalyst C'4) with a dealuminated zeolite having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ ratio of 119.7 (catalyst C4). See page 2 of the Declaration, and page 19, line 5 of the specification. One of ordinary skill in the art would expect that catalysts having different $\text{SiO}_2/\text{Al}_2\text{O}_3$ ratio would have different

Art Unit: 1755

catalytic activity. Thus, the Declaration is not persuasive in attempting to establish that a dealuminated zeolite is different than a as-synthesized zeolite.

Rejection over Casci et al. in view of Kuehl et al.

Applicants argue that Kuehl et al. fails to suggest employing its dealumination process with EU-1. This argument is not deemed persuasive. Kuehl et al. suggests that its process is amenable with any zeolite having a constraint index from 1 to 12. See the Abstract of the invention. Thus, it would have been obvious to one of ordinary skill in the art to have employed the Kuehl et al. process with any zeolite having a constraint index of 1 to 12. As explained above, it appears that EU-1 has a constraint index of 1 to 12 because it is structurally similar to ZSM-23 which has a constraint index of 9.1. Accordingly, it would have been obvious to one ordinary skill in the art to have employed the Kuehl et al. process on EU-1.

Applicants further argue that ZSM-23 and EU-1 have a different structure and therefore one would not expect that a dealumination treatment that works with ZSM-23 will also work with EU-1. This argument seems to misinterpret the rejection. It is not examiner's position that because Kuehl et al. discloses employing ZSM-23 that it would be obvious to employ the Kuehl process on EU-1. Rather, it is the examiner's position that it would be obvious to employ the Kuehl et al. process on any zeolite having a constraint index of 1 to 12. ZSM-23 is mentioned as evidence that EU-1 has a constraint index of between 1 and 12 because of the structural similarity.

The fact that EU-1 and ZSM-23 have been classified as having different structure types

Art Unit: 1755

does not weaken this argument. Casci et al. states that EU-1 and ZSM-23 are structurally similar in a manner analogous to ZSM-5 and ZSM-11. See col. 2, line 64 to col. 3, line 8. ZSM-5 and ZSM-11 have different structures designated MFI and MEL, respectively, yet the materials are closely related and have similar constraint indexes. See col. 5, lines 25-26. By analogy, it is the examiner's position that ZSM-23 and EU-1 are closely related and have similar constraint indexes even though the materials have different structures. ZSM-23 has a constraint index of 9.1. Since EU-1 and ZSM-23 are closely structurally related, EU-1 inherently has a constraint index close to 9.1, say between 8.1 and 10.1. Because EU-1 has a constraint index between 1 and 12, it would have been obvious to have employed the process of Kuehl et al. on the zeolite.

Finally, applicants assert unexpected results associated with the dealumination as shown by the Declaration. This argument is not deemed persuasive for the reasons stated above. Specifically, the Declaration compares zeolites having different Si/T ratios. Moreover, the Declaration is not commensurate in scope with the present claims because present claim 1 has no upper limit on the Si/T ratio and the declaration shows only one data point.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 1755

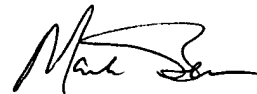
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (703)308-3825. The examiner can normally be reached from 8:30 AM to 5:00 PM Monday through Friday.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor can be reached at (703)308-3823. The fax number for this technical center is 305-3599.



D.R. Sample
August 19, 1999



Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700